

METHOD FOR FABRICATING A TRENCH HAVING A BURIED DIELECTRIC COLLAR

Abstract

A method of forming a buried dielectric collar around a trench and of forming a trench capacitor, the buried dielectric collar formed by: (a) forming the trench in a substrate; (b) forming a multilayer coating on sidewalls and a bottom of the trench; (c) removing a continuous band of the multilayer coating from the sidewalls a fixed distance from a top of the trench to expose a continuous band substrate in the sidewalls of the trench; (d) etching, in said exposed band of substrate, a lateral trench extending into said substrate in said sidewalls of said trench; and (e) filling the lateral trench with a dielectric material to form the buried dielectric collar. The trench capacitor is formed by filling the trench or its variants with polysilicon.